**IT Applications Unit 3**

Ch 3, **Networked information Systems**

Information systems take advantage of operating over a network.

Networks can be classified in a number of ways:

1. **Their size and architecture**
2. **Their topologies**
3. **The way in which they are connected, communication standards and transmission media**
4. **Their hardware and software**

Networks, p 81

1. What is a network?

A network connects computers together so that they can share data, information and resources such as printers, plotters, Internet access, servers, modems and scanners.

**Advantages of networks:**

Elaborate under the following points:

1. Resource sharing
   1. Internet connection

The convenience of having only one Internet connection allows everyone to be connected at one connection fee. This requires a higher quality of connection to provide the necessary speed.

* 1. Printers

The network provides the benefits of sharing a printer between computers allows people to do more work and saves costs.

* 1. Software

A site licence allows multiple users within an organisation to use a software package.

* 1. Other resources

These can include CD-ROM towers, fax machines, network storage and directory services.

1. Remote services, eg. ordering of goods, ATM’s
   1. What is a B2B network?

A B2B network is a business to business situation that can reduce costs and improve accuracy.A B2B network often will involve an extranet.

* 1. What is an extranet?

This is a private network that operates using internet protocols and the public telephone system. It allows businesses to network with suppliers, vendors, partners, customers or other businesses to share information or services.

1. Facilitate communication

A network allows people to communicate easily within an organisation or people outside the organisation through the use of the Internet. A network improves communication between users because it becomes simpler and faster.

1. Data and information sharing

The network allows data to be shared between users and enables users to retrieve information from more than one source.

1. Saving of money, etc
2. Security

The Classification of networks:

1. **Their size and architecture**
2. Describe a LAN.

A Local area network is a network that connects computers and devices in a limited geographical area.

1. What is a wireless LAN?

A wireless LAN uses radio waves, satellite communications, microwave or infra-red media to transmit signals between nodes, enabling faster access to shared resources.

1. Describe a WAN.

A wide area network is where the user’s data travels via a transmission medium not owned by the user.

**Network Architecture**

1. What does computer architecture refer to?

The network architecture refers to the design of a network, including the computers, devices and media.

**Client/server Network**

1. Describe the nature of this network.

A client/server network is one in which one or more computers act as a server, and the other computers on the network request services from the server.

1. What is meant by multi-tasking?

Multi-tasking is where the processor is able to perform more than one task because it only spends a small amount of time on each task before moving to the next and eventually returning to the first task.

1. List the different types of servers.

* File servers
* Print servers
* Database servers
* Webservers
* Domain name servers
* Proxy servers
* Back up servers
* Dynamic host configuration protocol servers
* Primary domain controller servers

**Peer-to-peer network**

1. Describe the nature of this type of network.

A peer-to-peer network is one which two computers share files directly with each other and both are considered equal in priority.

1. What is a “peer”?

A peer is someone on the same level as you.

1. What are the limitations of this type of network c/f a client/server network?

**Virtual Private Networks**

A type of WAN is a Virtual Private Network. Webopedia describes this network as *,* a [network](http://www.webopedia.com/TERM/V/network.html) that is constructed by using public wires to connect nodes. For example, there are a number of systems that enable you to create networks using the [Internet](http://www.webopedia.com/TERM/V/Internet.html) as the medium for transporting data. These systems use [encryption](http://www.webopedia.com/TERM/V/encryption.html) and other [security](http://www.webopedia.com/TERM/V/security.html) mechanisms to ensure that only [authorized](http://www.webopedia.com/TERM/V/authorization.html) users can access the network and that the data cannot be intercepted.

Read the article, “private network is hot property” as an illustration of this network.

**Voice over Internet Protocol, (VOIP)**

From the attached document, summarise the main features of VOIP.

* VoIP hardware and software work together to use the Internet to transmit telephone calls by sending data in packets.
* Advantage of VoIP is that telephone calls